

WHAT IS CLAIMED IS:

1. A method for dispatching a burst of test packets onto a network, the method comprising:
 - 5 generating a plurality of test packets;
 - forwarding to an I/O completion port a request that the test packets be dispatched; and,
 - dispatching the test packets onto the network using the I/O completion port.
- 10 2. The method of claim 1 wherein the packets are forwarded to the I/O completion port asynchronously;
- 15 3. The method of claim 1 wherein forwarding the test packets to the I/O completion port is performed by a user mode thread during a single time slice.
4. The method of claim 3 comprising:
 - 20 before forwarding the test packets, terminating the current time slice for the user thread; and forwarding the test packets to the I/O completion port at a start of a next time slice for the user thread.
- 25 5. The method of claim 4 comprising assigning a time-critical priority to the user mode thread.
6. The method of claim 3 comprising assigning a time-critical priority to the user mode thread.

- 7. The method of claim 3 wherein the user mode thread accesses directly buffers in a network interface device.
- 8. The method of claim 3 comprising receiving returning dispatched test packets after they have traversed a path in the network and time stamping notifications that the packets have been received.
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- 9. The method of claim 8 wherein the user mode thread creates in advance, or has created for it in advance, buffers sufficient for receiving all of the returning dispatched test packets.
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- 10. The method of claim 9 wherein the user mode thread uses a hardware counter for time stamping returning packets.
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- 11. The method of claim 9 comprising maintaining a private heap for packet data, wherein the private heap is accessible to the user mode thread.
- 12. The method of claim 11 wherein the private heap comprises standard-size allocation units for storing packets.
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- 13. The method of claim 12 wherein the standard-size allocation units are of an operating system memory page size.
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- 14. The method of claim 13 wherein the standard-size allocation units are 4096 bytes.
- 15. The method of claim 11 comprising assigning a larger than default process working set size to the user mode thread.

- 16. The method of claim 15 wherein the process working set size exceeds 8 Mbytes.
- 5 17. The method of claim 3 wherein the user mode thread accesses directly buffers in a network card from which the test packets are dispatched onto the network.
- 10 18. The method of claim 1 wherein generating the test packets comprises generating a plurality of equal-sized test packets.
- 15 19. The method of claim 1 wherein generating the test packets comprises generating ethernet test packets.
- 20 20. The method of claim 18 wherein generating the test packets comprises generating a plurality of equal-sized test packets wherein each of the test packets has a size in the range of 46 bytes to 1500 bytes.
- 20 21. The method of claim 1 comprising, receiving from the I/O completion port notifications that the packets have been dispatched and time stamping the notifications.
- 25 22. The method of claim 8 wherein receiving the returning dispatched packets comprises passing data for the returning dispatched packets through an I/O completion port associated with a network interface at which the returning dispatched packets are received.
- 30 23. A program product comprising a computer-readable medium carrying computer-readable signals comprising instructions which, when executed by a computer processor, cause the computer

processor to execute a method for dispatching a burst of test packets onto a network, the method comprising:

- generating a plurality of test packets;
- forwarding to an I/O completion port a request that the test packets be dispatched; and,
- dispatching the test packets onto the network using the I/O completion port.

24. The program product of claim 18 wherein the instructions comprise a controller section and a test handler section wherein the controller section and test handler section each comprise a separate thread.

25. Apparatus for dispatching bursts of packets onto a computer network, the apparatus comprising:

- a computer processor;
- a network interface;
- a program memory accessible to the processor, the program memory comprising test packet sequencer software comprising a series of instructions executable by the processor under control of an operating system, the instructions, if executed by the processor, causing the processor to:
- establish a first I/O completion port;
- generate a plurality of test packets;
- forward to the first I/O completion port a request that the test packets be dispatched; and,
- dispatch the test packets onto the network by way of the network interface under control of the first I/O completion port.

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26. The apparatus of claim 25 wherein the test packet sequencer software comprises a test controller layer associated with a second I/O completion port and a command controller layer associated with the first I/O completion port, wherein the test controller layer is configured to pass commands to the command controller layer by way of the first I/O completion port and the command controller layer is configured to pass raw data to the test controller layer by way of the second I/O completion port.

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